AMENDMENTS TO THE DRAWINGS

A replacement drawing sheet is attached following the signature page of this document. The replacement drawing sheet reflects the addition of reference numbers "210" and "212" in FIG. 7 that were missing in the original drawing sheet filed with the above-identified application.

REMARKS

I. Summary of the Office Action

Claims 1-21 and 24-39 are pending in this application.

Claims 22 and 23 are cancelled.

Claims 17, 19, 20, 23, 39, 40, 42, and 54 were rejected under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement.

Claims 1-21 and 24-26 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Krause et al., U.S. Patent No. 5,877,812 ("Krause").

Claims 27-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Krause in view of Meggers et al., U.S. Patent No. 6,728,270 ("Meggers").

II. Summary of Applicants' Response

Applicants have amended claims 1, 12-13, 26, 29, 32, and 35-39 to more clearly point out and distinctly claim the subject matter of the present invention.

Applicants respectfully traverse the claim rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103(a).

III. Response to Claim Rejections Under 35 U.S.C. § 102

The Examiner has rejected claims 1-21 and 24-26 as being anticipated by Krause. Applicants respectfully disagree with the Examiner's rejections and respectfully submit that Krause fails to disclose, teach, or suggest the claimed invention.

Krause discloses "a method (and apparatus) for reducing the size of data rate fluctuations that occur in forming a multiplex of a set of program streams; each program stream in said set decodable by a corresponding decoder, each corresponding decoder including a corresponding decoder buffer, said decoder buffers having a maximum allowable size, and said method includes varying the formation of the different program streams in said set to minimize the size of said data rate fluctuations" (Krause, col. 3, line 66, to col. 4, line 7).

As described in Krause, "multiple compressed program streams are combined into a single multiplex, as shown in FIGS. 2A and 2B. The multiplexer 201 combines each of the program streams 203 retrieved from storage 109 or obtained from any other

source, such as encoder 209 and/or satellite receiver 211, into a single multiplex 205 that can either be broadcast immediately over the distribution system or returned to storage for broadcasting at a later time" (Krause, col. 6, lines 7-13). Each of the program streams 203 is partitioned into variable- or fixed-length packets. "Multiplexer 201 orders the packets according to the sequence in which they are to be decoded at the respective decoder" (Krause, col. 7, lines 15-17).

The order in which the packets are to be decoded at the respective decoder is set according to the "Multiplexing Invention" described in Krause. "In Our Multiplexing Invention, each of the program streams 203 is assumed to have been subdivided into packets prior to multiplexing. Each time a packet is sent, the multiplexer selects the next packet by determining which of the decoder buffers corresponding to the n different channels will become empty first" (Krause, col. 7, lines 57-62). "Whenever data is to be sent, the method determines which packet to send next by selecting a next channel that has a decoder buffer that is not approaching a full state. The method further includes selecting a channel that substantially balances the decoder buffers of the decoders with which the program streams are decodable. In a further feature of that embodiment, balancing the decoder buffers includes keeping approximately the same time duration stored in each decoder buffer" (Krause, col. 8, lines 1-9). That is, packets in Krause are sent in an order dictated by the status of the decoder buffers.

In contrast, the present invention is directed at streaming media assets that are in packetized form, with the packets being transmitted "according to the time stamp in each packet" (claim 1). "The time stamped packets produced by packet producer 202 are sent from packet producer 202 to time stamped packet queue 204, a data structure that organizes time stamped packet into a first in, first out queue" (specification, page 7, lines 1-3). As such, the order in which packets are sent to the client is dictated by the time stamps and the "first in, first out queue" instead of the status of a decoder buffer as disclosed in Krause.

As described in the specification, "while packet producer 202 is a producer of time stamped packets, feeder software module 206 removes the packets from the queue and delivers them to the client according to the time stamp on each packet" (specification, page 7, lines 3-5). That is, packets are delivered to the client in the order of the time stamps and in the order they are placed in the queue. Contrary to Krause, there is no determination of "which packet to send next by selecting a next channel that

has a decoder buffer that is not approaching a full state" (Krause, col. 8, lines 2-4). The determination of which packet to send next is given by the time stamps, and not by the state of a decoder buffer in the client.

As such, there is no disclosure, teaching, or suggestion in Krause of "a delivery system for use in a client server computer architecture in which the server provides streaming media assets to at least one client over a computer network" wherein packets of the streaming media assets are transmitted "to a client via the computer network according to the time stamp in each packet" (claim 1) by first removing the packets from a "time stamp packet queue" (claim 1) with the packets placed in the queue "in a first in, first out order." The system and methods disclosed in Krause are not designed to deliver packets to a client according to time stamps placed in the packets by the server after the packets have been encoded. The time stamps disclosed in Krause are placed in the packets by the encoder, and are not used to specify the order in which packets are to be delivered to a client. In fact, Krause teaches away from having packets be transmitted "according to the time stamps placed in the packets" (claim 1) by having the packets be delivered according to a decoder buffer status.

Additionally, while in the present invention "stream processors can act as demultiplexers (separating audio and video from a single stream, for example) and feed multiple time stamp packet queues as shown in FIG. 7" (specification, page 7, lines 26-28), Krause is specifically targeted at combining multiple compressed program streams "into a single multiplex as shown in FIGS. 2A and 2B" (col. 6, lines 7-8). There is no disclosure, teaching, or suggestion in Krause that packets from multiple program streams having different data formats be demultiplexed, let alone delivered to a client according to time stamps placed in them after the packets have been encoded in any one of the different data formats.

In fact, Krause teaches away from having multiple time stamp queues with packets transmitted according to their time stamps by having packets in a single multiplex be processed in their entirety before they can be transmitted. "As shown in FIG. 3, in the segmented single-stream case, each of the n different segments 303 becomes an independent program stream, and each of these n independent program streams subsequently are aligned to start at the same time, herein referred to as 'stacking up'. The stacked-up program streams 203 are multiplexed together using multiplexer 201" (Krause, col. 6, lines 59-65).

That is, whereas in Krause different segments from a single-stream are aligned to start at the same time, the present invention discloses delivering different segments or packets of a single or multiple streams according to their time stamps, which may be specifically adjusted not to let packets be delivered at the same time. The limitation in Krause that streams are placed in a single multiplex and aligned to start at the same time does not lend itself to a video-on-demand application in which streams – and packets – can be aligned to start at any time, with the time dictated by their time stamps.

Moreover, partitioning a data stream into a plurality of segments as it is taught in Krause for "selecting and decoding a different program segment during each repetition of the multiplex" (Krause, col. 6, lines 32-34) restricts viewing of streams in such a way as to allow one to start viewing a stream only at specific time intervals, i.e., only according to "segment length 307" (Krause, FIG. 3), at the start of each segment. The present invention, however, allows one to start viewing a stream at any time, as a stream is not divided into segments, but rather, packets that are transmitted and removed from the time stamp packet queue according to the time stamp in each packet.

In short, there is no disclosure, teaching, or suggestion in Krause of a streaming delivery system capable of streaming media assets that are packetized into packets that are transmitted according to time stamps placed in the packets, rather than according to the status of a particular decoder buffer in the client.

Therefore, because Krause does not disclose, teach, or suggest the claimed invention, applicants respectfully submit that claims 1-21 and 24-26 and their respective dependent claims, distinguish from, and are allowable over, the cited reference.

IV. Response to Claim Rejections Under 35 U.S.C. § 103(a)

Applicants respectfully submit that the combination of Krause and Meggers fails to render obvious the claimed invention.

"A claimed invention is unpatentable if the differences between it and the prior art 'are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.'" 35 U.S.C. § 103(a); *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1965). Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step

of casting the mind back to the time of the invention, to consider the thinking of one skilled in the art, guided only by the prior art references and the then-accepted wisdom in the field. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.* 721 F.2d 1540, 1553.

The best defense against the subtle but powerful attraction of hindsight-based obviousness analysis is a rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. There must be a clear and particular showing based on actual evidence of a teaching, suggestion, or motivation to make the cited combination. *C.R. Bard, Inc. v M3 Sys., Inc.,* 157 F.3d 1340,1352 (Fed. Cir. 1998). Broad statements regarding the teachings of multiple references standing alone are not evidence.

The Examiner has suggested that the combination of the elements in Krause and Meggers would render the claimed invention obvious. Applicants respectfully disagree and submit that there is no suggestion in the art that the system for multiplexing program streams of Krause and the admission control method of Meggers should be combined to provide the system and methods of the present invention for delivering to a client streaming media assets that can have a plurality of data formats.

Meggers discloses "a method, apparatus and software programs for scheduling and admission controlling of real-time data packet traffic" (Meggers, Abstract). As described in Meggers, the method requires that "certain control data packets SCP, ACP are embedded into the stream by a traffic source or an intermediate gateway" (Meggers, col. 7, lines 7-9). "In a preferred embodiment of the present invention a traffic source inserts in addition admission control packets ACP into the packet stream. An admission control packet ACP includes parameters that characterize a sub-stream of data packets regarding its throughput requirements for real-time processing" (Meggers, col. 7, lines 14-17). "Admission control packets ACP may be repeatedly sent while the data transmission holds on. A traffic source may use in this way admission control packets ACP to signal changes in its resource usage" (Meggers, col. 7, lines 32-35).

As such, Meggers does not teach, suggest or motivate the admission control method performed by the feeder module of the present invention. Rather, the admission control disclosed in Meggers requires the use of additional packets in the packet stream that contain information required for the admission control to be performed. While the admission control of the present invention is performed by the feeder module prior to delivery of packets to the client by "defining a time window in

terms of a first duration of time; computing a number of bytes that need to be delivered during the time window, the bytes comprising a first streaming media asset; translating the computed number of bytes into a first time to process value for the first streaming media asset; and admitting for delivery the first streaming media asset if the first time to process value is smaller than the time window" (claim 27), the admission control disclosed in Meggers requires "an admission control packet ACP is received at an admission controller 10, or in general, at a network node or an application" (Meggers, col. 10, lines 2-4) for admission control to be performed. That is, while the admission control of the present invention is based only on the packets of the streaming media asset itself and computed time values, the admission control disclosed in Meggers requires control packets that are not part of the data packets of the streaming media asset.

Furthermore, Meggers requires feedback between the admission controller and the packet source for the admission control method to be performed. As described in Meggers, "in a further embodiment of the present invention, the admission controller sends back a modified admission control packet ACP towards the packet source. This mechanism enables intermediate nodes or the packet source to react on negative admissions of data packets for real-time processing" (Meggers, col.. 7, lines 36-40).

In contrast, there is no feedback of control packets in the admission control disclosed in the present invention. Admission control is performed by the feeder module without the aid of any specific control packets and without sending feedback to the packet source. Meggers specifically teaches away from the admission control of the present invention by requiring the extra control packets and feedback mechanism for the admission control to be performed.

Further, Maggers performs admission control on a packet-by-packet basis. That is, Maggers checks whether each packet in a given stream can be admitted according to its delivery deadline. With this scheme, it is possible that initial packets in a stream are admitted while the rest is not. The present invention, however, performs admission control on a stream-by-stream basis. If packets from a stream start to be admitted and delivered, it is because the entire stream has been admitted. The present invention does not allow for some packets in a stream to be delivered and others not; rather, the entire stream is evaluated for admission and either the entire stream is delivered or not. This is a fundamental difference between Maggers and the present invention.

Applicants therefore respectfully submit that the combination of Krause and Meggers do not render the claimed invention obvious. Accordingly, applicants respectfully submit that claims 27-39 distinguish from, and are allowable over, the cited references.

Applicants further submit that none of the tertiary references cited in the Office action remedy the deficiencies in the combination of Krause and Meggers and thus cannot render the claimed invention obvious.

CONCLUSION

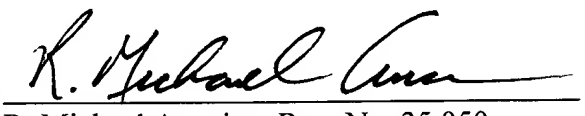
In view of the above amendments and remarks, applicants respectfully submit that the present application is in condition for allowance.

If any matters can be resolved by telephone, the Examiner is invited to call the undersigned at the telephone number listed below.

While Applicant believes that no further fees are due at this time, the Commissioner is authorized to charge any fees that may be due as a result of filing this amendment, including additional claims fees not already paid for, extension fees or other fees that have not been separately paid, to Deposit Account 50-2319 (Order No. A-69523/RMA/MRC (468914-28)).

Respectfully submitted,

Date: November 1, 2005

By: 
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ANNOTATED SHEET SHOWING CHANGES

FIG. 4

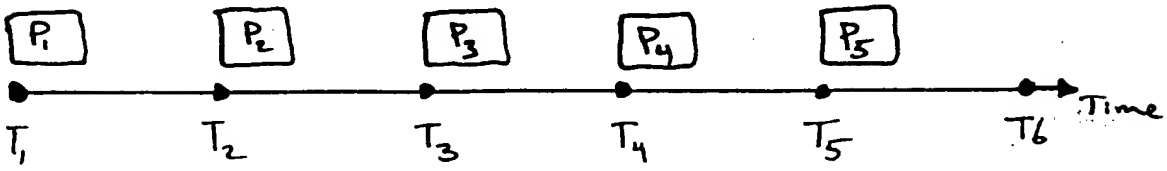

FIG. 5

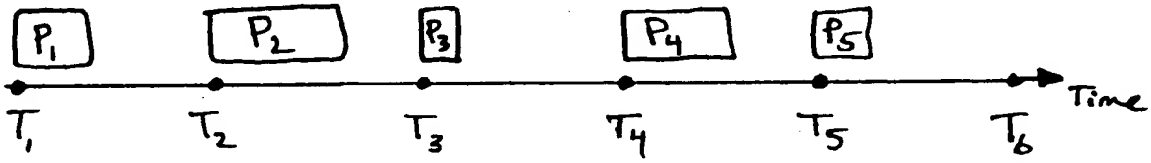

FIG. 6

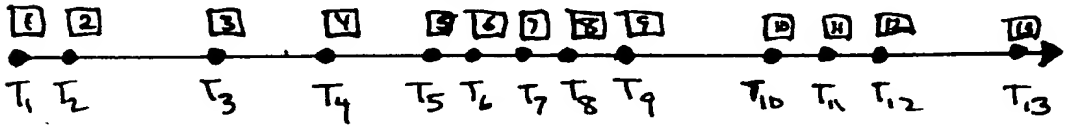

FIG. 7